REMARKS

Reconsideration of the Office action mailed July 14, 2005 in connection with the above-identified patent application is requested in view of the following remarks.

Claim Rejections – 35 U.S.C. § 103

1. Rejections based on Yoneda, Zettler and Nagel.

The examiner rejected claims 1, 11, 20, 21, 28 and 30 under 35 U.S.C. 103 in light of Yoneda (US Patent 4,117,752) combined with Zettler (US Patent 4,048,886) and Nagel (US Patent 5,648,644). Those rejections are traversed. The rejection of each claim is discussed below.

Claim 1

Claim 1 describes a woodworking machine with a cutting tool and a motor to drive the cutting tool. The machine also has a detection system configured to detect a dangerous condition between a person and the cutting tool and a reaction system controllable to disable the cutting tool if the dangerous condition is detected. A control system is configured to determine the operability of the reaction system without having to operate the reaction system and to disable the motor if the reaction system is inoperable. This configuration helps insure the machine is used only when the reaction system is ready to act if the dangerous condition is detected.

One embodiment of a machine as described in claim 1 is a table saw with an electronic detection system configured to detect contact or proximity between the blade and a person. If contact or proximity is detected, then a reaction system would disable the blade, such as by stopping the blade from spinning, retracting the blade into the saw, or covering the teeth of the blade, for example. A control system in the saw would

determine if the reaction system is working without having to operate the reaction system. If there was something wrong with the reaction system, such as the failure of a specified electronic or mechanical component, then the control system would disable the motor so the blade would not spin.

The examiner says claim 1 is obvious in light of Yoneda combined with Zettler and Nagel. Yoneda discloses a band saw configured to detect when a person comes into contact with the blade. The saw includes a blade looped around a plurality of pulleys so that the blade moves when the pulleys spin. The saw includes an electromagnetic brake to decelerate the motor and an electromagnetic clamp brake to clamp the sides of the blade if a person touches the blade. The examiner says Yoneda discloses a woodworking machine with a cutting tool, a motor, a detection system and a reaction system, but the examiner recognizes Yoneda does not disclose a control system to determine the operability of the reaction system without having to operate the reaction system. The examiner cites the combination of Zettler and Nagel for that feature.

Zettler discloses a brake monitoring system used in a punch press to check the condition of a brake by measuring the deceleration of the machine. (Zettler, column 1, lines 35-39.) A brake monitor measures the distance/time it takes for a clutch-brake to stop the movement of a slide, and if the clutch-brake stops the slide within a given time, then the brake monitor indicates a safe stop and another cycle of the press may be triggered. However, if the stopping time exceeds a given value for any reason, for example because a brake pad is worn or defective, then the brake monitor shuts down the machine. (Zettler, column 1, lines 36-50, column 4, lines 44-63.) The examiner says

Zettler's brake monitor is a control system configured to determine the operability of a reaction system, but he recognizes that the brake monitor requires operation of the brake; it is not a control system that determines the operability of the reaction system without having to operate the reaction system. Nevertheless, the examiner says Nagel teaches a control system capable of determining the operability of a reaction system without having to operate the reaction system and that Zettler's system could be modified as taught by Nagel.

Nagel discloses a brake system for elevators. The system includes a pair of brake pads that rub against rails to stop the elevator. A sensor is embedded in each brake pad and connected to an elevator control. The elevator control stops the elevator if it receives an appropriate change in signal from the sensor. Nagel says excess temperature or wear of a brake pad are examples of when the sensor could signal the control to stop the elevator. (Nagel, column 3, lines 16-23.) The examiner says Nagel's brake sensor is capable of monitoring the brake without having to operate the brake, and in light of Nagel's disclosure, it would have been obvious to modify Zettler's brake monitor to check the operability of its brake without having to operate the brake.

Applicant traverses the examiner's rejection for several reasons. First, Nagel should not be considered because it is outside the proper scope and content of the art. In other words, Nagel is outside the field of applicant's endeavor and is not pertinent to the particular problem addressed by applicant's invention. The Federal Circuit has explained: "In order to rely on a reference as a basis for rejection of the applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the invention was

concerned." In re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992) (citation omitted); see also MPEP 2141.01(a). The field of applicant's endeavor is woodworking equipment while the field of Nagel's endeavor is elevators. Clearly, these fields are different. Therefore, Nagel can only be considered if it is reasonably pertinent to the particular problem addressed by applicant's invention.

The Federal Circuit explained how to determine whether a reference is reasonably pertinent in the case of In re Clay, 966 F.2d 656, 659, 23 USPQ2d 1058 (Fed. Cir. 1992). In that case, the Federal Circuit reversed a rejection of claims to a process for storing liquid hydrocarbon in a tank having a dead volume between the bottom of the tank and its outlet. Id. at 657. The process included the step of placing gel in the dead volume. The claim was rejected in light of two references: Hetherington, which disclosed a petroleum storage tank that used bladders to fill the dead space at the bottom of the tank, and Sydansk, which taught using gel to fill anomalies in underground petroleum formations. The Patent Office ruled that Clay's invention was obvious in light of the combination of these two references.

Clay appealed the rejection and argued that Syndask should not have been considered because it was non-analogous art; i.e., Syndask was art from a different field of endeavor and not reasonably pertinent to the problem of removing dead space from storage tanks. The Federal Circuit agreed and reversed the rejection. The Federal Circuit explained that Syndask was not within the field of Clay's endeavor because Clay concerned the *storage* of refined liquid hydrocarbos while Syndask concerned itself with the *extraction* of crude petroleum. Id. at 659. The court then considered whether

Syndask was reasonably pertinent to the problem addressed by Clay. In answering that question, the court set forth the following rule and analysis:

> A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem. Thus, the purposes of both the invention and the prior art are important in determining whether the reference is reasonably pertinent to the problem the invention attempts to solve. If a reference disclosure has the same purpose as the claimed invention, the reference relates to the same problem, and that fact supports use of that reference in an obviousness rejection. An inventor may well have been motivated to consider the reference when making his invention. If it is directed to a different purpose, the inventor would accordingly have had less motivation or occasion to consider it. In re Clay, 966 F.2d 656, 659, 23 USPQ2d 1058 (Fed. Cir. 1992).

The Federal Circuit then applied that standard and explained that the purpose of Clay was to displace liquid from dead spaces in a storage tank while the purpose of Syndask was to recover oil from rock. The court also explained that a subterranean formation "is not structurally similar to, does not operate under the same temperature and pressure as, and does not function like Clay's storage tanks." Id. at 660. Therefore, the court ruled that Syndask was not reasonably pertinent and reversed the rejection.

The situation in Clay is similar to the case at hand. The purpose of applicant's invention is to minimize the chance that a person could be severely injured by a cutting tool in a woodworking machine. In contrast, Nagel set forth the purpose of his invention as follows: "controlling the braking force exerted on an elevator car by a brake device engaging a guide rail." (Nagel, column 1, lines 32-33.) Nagel explains that "the advantages achieved by the invention are that the elevator user is not subjected to unnecessary retardation forces during an emergency braking, which promotes travel comfort and safety even in the case of an emergency braking, and in particular for

disabled users of elevators." (Nagel, column 1, lines 55-59.) Clearly, these are different purposes.

Woodworking machines and elevators are also different both structurally and functionally. A woodworking machine as set forth in applicant's claim 1 includes a cutting tool, a motor to drive the cutting tool, a detection system to detect a dangerous condition between a person and the cutting tool, and a reaction system to disable the cutting tool, none of which is found in an elevator. Elevators, in contrast, have elevator shafts, guide rails, cars, hydraulics, valves, speed sensors, retardation sensors, and other components not found in woodworking machines. Woodworking machines typically operate by spinning some type of cutting tool. Elevators operate by moving an elevator car up and down in an elevator shaft. The function of a woodworking machine is to cut or shape a workpiece; the function of an elevator is to transport people and goods from one floor of a building to another.

Thus, woodworking machines and elevators have different purposes, structures, operations and functions. Because of these differences, Nagel would not have logically commended itself to applicant's attention in considering how to minimize the chance that a person could be severely injured by a cutting tool in a woodworking machine, and as a result, Nagel is non-analogous art to applicant's claims. The situation at hand is the same as the situation in Clay; different purposes, structures, operations and functions show that elevators are not pertinent to woodworking machines just as different purposes, structures, operations and functions showed that extracting oil from subterranean formations was not pertinent to storing hydrocarbon liquid in storage

tanks. Nagel should not be considered in this obviousness inquiry just as the Sydansk reference was not considered in Clay.

The case of In re Oetiker, 977 F.2d 1443 (Fed. Cir. 1992), further explains when a reference is analogous art that may be considered in an obviousness analysis. In that case, the Federal Circuit reversed a rejection of claims to a hose clamp having a hook to maintain a preassembly condition of the clamp. The Patent Office had rejected the claims based on the combination of an earlier patent to Oetiker disclosing the clamp without the hook and a patent to Lauro describing a plastic hook and eye fastener used in garments. Id. at 1446.

The Federal Circuit explained:

> In order to rely on a reference as a basis for rejection of the applicant's invention, the reference must either be in the field of the applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned. See In re Deminski, 796 F.2d 436, 442, 230 USPQ 313, 315 (Fed. Cir. 1986). Patent examination is necessarily conducted by hindsight, with complete knowledge of the applicant's invention, and the courts have recognized the subjective aspects of determining whether an inventor would reasonably be motivated to go to the field in which the examiner found the reference, in order to solve the problem confronting the inventor. We have reminded ourselves and the PTO that it is necessary to consider "the reality of the circumstances", In re Wood, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA 1979) – in other words, common sense – in deciding in which fields a person of ordinary skill would reasonably be expected to look for a solution to the problem facing the inventor.
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> It has not been shown that a person of ordinary skill, seeking to solve a problem of fastening a hose clamp, would reasonably be expected or motivated to look to fasteners for garments. The combination of elements from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a *prima facie* case of obviousness. There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicant's invention itself. Id. at 1447.

This analysis from Oetiker applies to the case at hand. The Patent Office has not shown that a person of ordinary skill in the art of designing woodworking machines, seeking to minimize the chance that a person could be severely injured by a cutting tool, would be expected or motivated to look to brake systems for elevators, just as the Patent Office in Oetiker failed to show that a person of ordinary skill seeking to solve a problem of fastening a hose clamp would look to the garment industry for fasteners. It is only with the benefit of hindsight - with knowledge of applicant's invention - that one would consider combining elements from elevators with woodworking machines to arrive at applicant's claimed invention, just as it was only with hindsight that one would consider combining elements from garments with hose clamps. And that use of non-analogous references is error in the present application just as it was error in Oetiker.

In re Pagliaro, 657 F.2d 1219, 210 USPQ 888 (CCPA 1981), is another case which illustrates this point. The invention in that case involved a process for preparing decaffeinated beverages. The invention used edible fats to extract the caffeine while the prior art used potentially toxic solvents. Id. at 1220. The examiner rejected the claims as obvious in light of a patent to Nutting combined with either a patent to Rector or an article by Aeillo. Nutting taught the conventional process of using solvents. Id. at 1221. Rector disclosed a method of making coffee by grinding coffee beans with oil and then extracting the oil, and Rector said the extracted oil was more heavily charged with the stimulative elements of the coffee. Id. Aeillo discussed the lipoid theory of narcotics, and specifically, the solubility of narcotics in fatty oils. Id. at 1221-1222. The Board of Patent Appeals and Interferences affirmed the rejection and Pagliaro appealed.

On appeal, the Court of Customs and Patent Appeals reversed the rejection because the Board misinterpreted Rector and because Aeillo was a non-analogous reference. The court's discussion of Aeillo is particularly relevant to the case at hand. The court explained:

> We regard Aeillo as nonanalogous art, which cannot properly be considered pertinent prior art under 35 U.S.C. 103. In In re Wood, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (Cust. & Pat. App.1979), this court stated: "In resolving the question of obviousness under 35 U.S.C. s 103, we presume full knowledge by the inventor of all the prior art in the field of his endeavor. However, with regard to prior art outside the field of his endeavor, we only presume knowledge from those arts reasonably pertinent to the particular problem with which the inventor was involved. (Citation omitted.) The rationale behind this rule precluding rejections based on combination of teachings of references from nonanalogous arts is the realization that an inventor could not possibly be aware of every teaching in every art. Thus, we attempt to more closely approximate the reality of the circumstances surrounding the making of an invention by only presuming knowledge by the inventor of prior art in the field of his endeavor and in analogous arts."
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> The determination that a reference is from a nonanalogous art is therefore twofold. First, we decide if the reference is within the field of the inventor's endeavor. If it is not, we proceed to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved.
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> Both the instant claims and Nutting involve decaffeination of vegetable materials; whereas, Aeillo compares the solubility of a diuretic solution, such as a caffeine solution combined with an oil/serum mixture, to the same solution combined with an oil/water mixture. He determines that caffeine is "more soluble in serum than in water." From this he concludes that the Meyer/Overton lipoid theory of narcotics, which was based upon experiments using an oil/water mixture, is inaccurate because an oil/water mixture does not approximate the substances found in the human body. Thus, Aeillo's disclosure is not "within the field of the inventor's endeavor." Further, Aeillo is not pertinent to appellants' problem because he is not concerned with either beverage preparation or decaffeination of vegetable materials. There is no common environment which could form a "close relationship" between either the claimed invention or Nutting on the one hand and Aeillo on the other to logically require consideration of Aeillo. In re Antle, 58 CCPA 1382, 1387, 444 F.2d 1168, 1171-72, 170 USPQ 285, 287-88 (1971). An earlier statement by this court in In re Van Wanderham, 54 CCPA 1487, 1494, 378 F.2d 981, 988, 154 USPQ 20,

> 25 (1967), is particularly appropriate: "Our determination here is not without difficulty. However, we think the difficulty arises from not considering the subject matter as a whole and instead focusing on the scientific principle involved ...."
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> In this case, the board erred by focusing on the affinity of olive oil for caffeine without considering the subject matter of Aeillo as a whole and the impropriety of the Aeillo reference, as pointed out above. (Pagliaro, 657 F.2d at 1224-1225.)

In the case at hand, the examiner did not consider Nagel as a whole, just at the board in Pagliaro did not consider the Aeillo reference as a whole. Instead, the examiner simply focused on the fact that Nagel disclosed a sensor to signal a control to stop the elevator. (Final Office Action, 3.) When Nagel is considered as a whole, the differences between a woodworking machine and an elevator become apparent. There simply is no "common environment which could form a 'close relationship'" between woodworking machines and elevators, just as there was no such common environment between the decaffeination of vegetable materials and the solubility of a diuretic solution in Pagliaro.

Even if Nagel were analogous art, which it is not, there still would have to be some teaching, suggestion, or motivation to combine Yoneda, Zettler and Nagel in order to render applicant's claim 1 obvious. In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453 (Fed. Cir. 1998). In the case at hand, there is no such suggestion. This is a second reason why applicant traverses the rejection.

The only suggestion identified by the examiner to combine the references is the following:

> It would have been obvious to one skilled in the art at the time of the invention to test operability of Yoneda's reaction system, as modified by Zettler, without operating the reaction system as taught by Nagel in order to determine the defects of the reaction system when the reaction

> system is operating as well as the time that the reaction system is not operating." (Office action, 3-4.)

But that statement is circular; it simply says it would be obvious to test operability in order to test operability. Such a statement does not amount to a suggestion or motivation found in the prior art to make the claimed combination because it fails to identify any specific understanding or scientific principle suggesting the combination.

This is explained by the case of In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453 (Fed. Cir. 1998). In that case the Board of Patent Appeals and Interferences affirmed the rejection of an application concerning a satellite communication system. The application addressed the problem of how to keep a receiver on the earth in communication with a satellite moving around the earth. Typically, a satellite transmits multiple signal beams to the earth and a receiver must switch from one beam to another as the satellite moves. This switching from beam to beam is referred to as a handover, and a disruption in communication is more likely during a handover. Rouffet minimized the number of handovers required by changing the shape of the transmitted beams from cones to fans. Fan-shaped beams have elliptical footprints that extend parallel to the direction of a satellite's motion. The elliptical footprints help ensure that a fixed point on the earth will remain within the satellite's beam. Id. at 1353.

The examiner rejected Rouffet's claims as obvious in light of a patent to King, a patent to Rosen, and a conference report by Ruddy. King disclosed a system to launch a plurality of low-orbit satellites. Rosen disclosed a geostationary satellite using fan-shaped beams oriented in an east-west direction. Ruddy disclosed a television broadcast system that transmitted a single fan-shaped beam upward from the earth into which satellites would successively enter. The fan-shaped beam was oriented so its

long axis was aligned with the long axes of the satellites' orbits. Id. at 1356. The Board affirmed the examiner's rejection and added an alternative rejection based on the combination of two other patents. Rouffet then appealed to the Federal Circuit.

On appeal, the Federal Circuit found no error in the Board's conclusion that "the combination of King, Rosen, and Ruddy contains all of the elements claimed in Rouffet's application." Id. at 1357. But the Federal Circuit did conclude that "the Board reversibly erred in determining that one of skill in the art would have been motivated to combine these references in a manner that rendered the claimed invention obvious." Id. The Federal Circuit said the Board erred by failing to identify any specific understanding or scientific principle suggesting the combination. The court explained that an examiner cannot simply find claim elements in the prior art and then combine them to arrive at the invention because such an approach would allow hindsight to influence the determination. Rather, an examiner must find the claim elements in the prior art and then specify how the prior art suggests or motivates the combination of those elements. This is explained in the following discussion from Rouffet:

> As this court has stated, "virtually all [inventions] are combinations of old elements." *Environmental Designs, Ltd. V. Union Oil Co.*, 713 F.2d 693, 698, 218 U.S.P.Q. 865, 870 (Fed. Cir. 1983); *see also Richdel, Inc. v. Sunspool Corp.*, 714 F.2d 1573, 1579-80, 219 U.S.P.Q. 8, 12 (Fed. Cir. 1983) ("Most, if not all, inventions are combinations and mostly of old elements.") Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentability." *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570, 38 U.S.P.Q.2d 1551, 1554 (Fed. Cir. 1996).

> To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.
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> This court has identified three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art. In this case, the Board relied upon none of these. Rather, just as it relied on the high level of skill in the art to overcome the differences between the claimed invention and the selected elements in the references, it relied upon the high level of skill in the art to provide the necessary motivation. The Board did not, however, explain what specific understanding or technological principle within the knowledge of one of ordinary skill in the art would have suggested the combination. Instead, the Board merely invoked the high level of skill in the field of art. If such a rote invocation could suffice to supply a motivation to combine, the more sophisticated scientific fields would rarely, if ever, experience a patentable technical advance. Instead, in complex scientific fields, the Board could routinely identify the prior art elements in an application, invoke the lofty level of skill, and rest its case for rejection. To counter this potential weakness in the obviousness construct, the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness.
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> Because the Board did not explain the specific understanding or principle within the knowledge of a skilled artisan that would motivate one with no knowledge of Rouffet's invention to make the combination, this court infers that the examiner selected these references with the assistance of hindsight. This court forbids the use of hindsight in the selection of references that comprise the case of obviousness. *See In re Gorman*, 933 F.2d 982, 986, 18 U.S.P.Q.2d 1885, 1888 (Fed.Cir.1991). Lacking a motivation to combine references, the Board did not show a proper *prima facie* case of obviousness. This court reverses the rejection over the combination of King, Rosen, and Ruddy. (Rouffet, 149 F.3d at 1357-1358.)

This discussion is pertinent to the case at hand because the examiner in the present application did not identify any specific understanding or technological principle that would motivate a person of ordinary skill to select the various elements from the

prior art and arrange them as set forth in applicant's claim 1, just as the Board in Rouffet failed to identify any such understanding or principle. The examiner in the case at hand simply said it would have been obvious to test a reaction system without operating the system in order to determine defects in the system. That statement is similar to the invocation of a high level of skill to justify the combination of King, Rosen and Ruddy in Rouffet. As explained by the Federal Circuit, such rote invocations cannot provide the required motivation because then there would rarely be any patentable technical advance. Instead, a specific suggestion to make a combination is required, and that requirement must be diligently applied because, as the Federal Circuit has said, "Invention itself is the process of combining prior art in a nonobvious manner." Id. at 1359.

Another case explaining the requirement of a specific suggestion to combine references is In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) (citations omitted), *abrogated on other grounds* in In re Gartside, 203 F.3d 1305, 53 USPQ2d 1769 (Fed. Cir. 2000). In that case the Board of Patent Appeals and Interferences affirmed the rejection of an application concerning a trash bag made to look like a jack-o'-lantern when filled with leaves or trash. The application was rejected in light of conventional plastic trash bags combined with orange crepe paper jack-o'-lanterns (referred to as the Holiday reference) and paper bag pumpkins (referred to as the Shapiro reference). The Federal Circuit reversed the rejection because the Board did not identify a suggestion to make the combination. The Federal Circuit explained,

> [R]ather than pointing to specific information in Holiday or Shapiro that suggest the combination with the conventional bags, the Board instead described in detail the similarities between the Holiday and Shapiro references and the claimed invention, noting that one reference or the

> other – in combination with each other and the conventional trash bags – described all of the limitations of the pending claims. ... Nowhere does the Board particularly identify any suggestion, teaching, or motivation to combine the children's art references (Holiday and Shapiro) with the conventional trash or lawn bag references, nor does the Board make specific -- or even inferential -- findings concerning the identification of the relevant art, the level of ordinary skill in the art, the nature of the problem to be solved, or any other factual findings that might serve to support a proper obviousness analysis. ...
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> ...Yet this reference-by-reference, limitation-by-limitation analysis fails to demonstrate how the Holiday and Shapiro references teach or suggest their combination with the conventional trash or lawn bags to yield the claimed invention. ... Because we do not discern any finding by the Board that there was a suggestion, teaching, or motivation to combine the prior art references cited against the pending claims, the Board's conclusion of obviousness, as a matter of law, cannot stand. (Dembiczak, 175 F.3d at 1000.)

Just as in Dembiczak, the examiner in the case at hand made a reference-by-reference, limitation-by-limitation analysis without identifying any specific teaching or suggestion in the prior art to make the combination. In other words, the examiner simply found what he thought were the elements of applicant's claim and then combined those elements according to applicant's teachings. As explained in Dembiczak, that type of analysis cannot support a conclusion of obviousness. The Federal Circuit clearly stated: "Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability – the essence of hindsight." Id. at 999. In the case at hand, just as in Dembiczak, the examiner "fell into the hindsight trap." Id.

A third reason why applicant traverses the examiner's rejection is that Nagel fails to disclose a control system configured to determine the operability of a reaction system without having to operate the reaction system, as required by claim 1. Nagel describes his system as follows:

> Each of the brake pads 12 has a brake sensor 13 embedded therein which serves to monitor the brake pad. The brake sensor 13 can be, for example, a temperature-dependent resistor which generates a signal that is continuously evaluated by an elevator control 27 (FIG. 11) connected to the sensor. The control 27 stops the elevator car 3 upon an appropriate change in the sensor signal, for example due to excess temperature or wear of the brake pad 12. (Nagel, column 3, lines 16-23.)

The examiner interpreted this statement as disclosing a brake sensor capable of monitoring the operability of the brake pads without having to operate the brake. Specifically, the examiner said:

> Nagel teaches a control system 27 which is connected to a brake sensor 13 which monitors brake pads 12 of a brake 9 without operating the brake or the reaction system. The brake sensor 13 monitors the excessive temperature and the wear of the brake pads even if the brake pads are not operating. See Figs. 1-12 and col. 3, lines 9-55 in Nagel. (Office action, 3.)

But the examiner does not explain why he thinks sensor 13 monitors brake pads 12 without operating the brake. The actual language from Nagel quoted above implies the opposite. The language implies that the brake must operate in order for the signal to change because the only example given of a brake sensor is a temperature-dependent resistor and it is the friction of braking that causes the temperature to change. As the brake operates, the brake pad will rub against a surface on a guide rail and heat up. If there is too much friction because the elevator is moving too fast, or if the brake pad is too thin, then the temperature-dependent resistor will heat up and cause the signal to change. However, if the brake is not operating, there will be no change in temperature and the output of the sensor will remain constant, so there would be no way to check the operability of the brake pad. Thus, Nagel fails to disclose a control system configured to determine the operability of a reaction system without having to operate

the reaction system. Consequently, even if Nagel were analogous art, which it is not, and even if there were a suggestion to combine references, which there is not, the combination of Yoneda, Zettler and Nagel still would fail to disclose all the limitations of claim 1, which means claim 1 is not obvious in light of those references. See MPEP 2143.03 ("To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." Citation omitted.)

A fourth reason why applicant traverses the examiner's rejection is because there is no reasonable expectation that the brake monitoring system of Zettler's punch press could be successfully combined with the band saw disclosed in Yoneda, and absent such a reasonable expectation, a conclusion of obviousness is improper. MPEP 2143.02. Zettler's system is designed to measure the time it takes to stop a crankshaft. The crankshaft must complete one cycle before the brake monitor can determine whether the clutch-brake is malfunctioning because the brake monitor must measure the time it takes to stop the crankshaft and compare that time to predetermined values. If the crankshaft takes too long to stop and rotates past a predetermined angular range, then the system interprets that as a brake failure. (Zettler, column 5, lines 3-21, 41-43, et seq.) None of this would work in Yoneda's band saw because a band saw does not include a crankshaft and because it does not operate in cycles like a press. Thus, the brake monitoring system of Zettler could not be successfully added to the band saw of Yoneda.[1]

[1] The differences in construction and operation between the punch press disclosed in Zettler and the woodworking machines defined by applicant's claims are so great that applicant asserts Zettler is outside the proper scope and content of the art, as explained in prior amendments.

A fifth reason why applicant traverses the examiner's rejection is because there is no reasonable expectation that the elevator brake sensor disclosed in Nagel could be successfully combined with the brake monitoring system of Zettler's punch press. Nagel's brake sensor monitors the temperature and wear of a brake pad while Zettler measures the time it takes to stop a crankshaft. A sensor as disclosed in Nagel simply does not measure time as required by Zettler, so there is no reasonable expectation that the proposed combination would work. In fact, modifying Zettler's brake monitoring system as purportedly taught by Nagel would change the principle of operation of Zettler's system. As stated, Zettler looks for the time it takes to stop a crankshaft and if that time exceeds a predetermined value, then the system interprets that as a failure. Modifying Zettler to somehow monitor the brake without having to measure the time required to stop the crankshaft would change the principle of operation of Zettler's system, and any such change is clearly impermissible in an obviousness inquiry. MPEP 2143.01.

For all these reasons, applicant's claim 1 is not obvious in light of Yoneda, Zettler and Nagel and that rejection should be withdrawn.

Claim 11

Claim 11 depends from claim 1 and is not obvious for the same reasons claim 1 is not obvious. Claim 11 also specifies that "the reaction system is adapted to be electrically coupled to the control system, and where the control system is configured to disable the motor if the reaction system is not coupled to the control system." Nothing in any of the cited references teaches or suggests disabling a motor if a reaction system is not coupled to the control system. Yoneda's system interrupts power to the motor if a

hand or finger contacts the blade. (Yoneda, column 3, lines 14-26.) Zettler prevents a punch press from cycling if the stopping time of a prior cycle exceeds a given value or if a signal is received from a pinch-point intrusion contact or die protection contact. (Zettler, column 1, lines 36-50 and column 4, lines 44-63.) Nagel discloses stopping an elevator if retardation forces are too great. (Nagel, column 1, lines 32-59.) Nothing in any of the cited references suggests disabling a motor that drives a cutting tool if a reaction system is not coupled to the control system. If the examiner asserts otherwise, then applicant requests the examiner to identify specifically the corresponding disclosure.

Claim 20

Claim 20 describes a woodworking machine with a cutting tool for cutting workpieces. The machine has a detection system adapted to detect a dangerous condition between a user and the cutting tool and a reaction system adapted to disable the cutting tool when the detection system detects the dangerous condition. A control system is adapted to monitor the detection system and control actuation of the reaction system. The control system is further adapted to test at least a portion of the reaction system to verify that the portion of the reaction system is operational without having to operate the reaction system.

Claim 20 is not obvious for the same reasons claim 1 is not obvious. Furthermore, nothing in any cited reference suggests testing a portion of a reaction system to verify that the portion is operational without having to operate the reaction system. Nevertheless, the examiner said: "Yoneda's control system, as modified by Zettler, tests the braking system as the whole, which also includes a portion of the

braking system." (Office action, 4.) Applicant requests clarification of this statement. Where does Yoneda or Zettler suggest testing a portion of a reaction system without having to operate the reaction system? Yoneda does not test its brake at all and Zettler and Nagel must operate their systems to check them, as explained above.

Claim 21

Claim 21 depends from claim 20 and is not obvious for the same reasons claim 20 is not obvious. Claim 21 also recites "a motor controllable by the control system to drive the cutting tool, and where the control system is adapted to test the portion of the reaction system prior to actuation of the motor, and where the control system is adapted not to actuate the motor unless the portion of the reaction system is operational." None of the cited references tests a portion of a reaction system prior to actuation of a motor. The examiner says Nagel teaches testing a reaction system prior to actuation of a motor, but the examiner's position is incorrect. As explained, Nagel requires activation of its elevator to test the temperature and wear of its brake pads.

Claim 28

Claim 28 describes a woodworking machine with a support structure, a cutting tool adapted to move to cut a workpiece, and a motor adapted to drive the cutting tool. The machine also has a detection system adapted to detect a dangerous condition between the cutting tool and a person, and a reaction system adapted to perform a specified action upon detection of the dangerous condition. A self-test system is adapted to test the operability of at least a portion of the reaction system without having to perform the specified action and to disable the motor if the tested portion of the

reaction system is inoperable. Claim 28 is not obvious for the same reasons claims 1 and 20 are not obvious.

Claim 30

Claim 30 describes a woodworking machine having a cutting tool for cutting workpieces and a motor adapted to drive the cutting tool. The machine also has detection means for detecting a dangerous condition between a person and the cutting tool, and reaction means for disabling the cutting tool if the dangerous condition is detected. Control means determine the operability of the reaction means without having to operate the reaction means and disables the motor if the reaction means is inoperable. Claim 30 is not obvious for the same reasons claims 1 and 20 are not obvious.

2. Rejections based on Yoneda, Zettler, Nagel and Balban.

The examiner rejected claims 2, 3 and 31 under 35 U.S.C. 103(a) in light of Yoneda combined with Zettler, Nagel and Balban (US Patent 3,863,208). This rejection is traversed.

Claim 2

Claim 2 depends from claim 1 and is not obvious for the same reasons claim 1 is not obvious.

Additionally, the Balban reference should not be considered because it is outside the proper scope and content of the art. The field of Balban's endeavor is vehicle safety systems while the field of applicant's endeavor is woodworking equipment. Balban is not reasonably pertinent to the particular problem addressed by applicant's invention because woodworking machines and vehicle safety systems have different purposes,

structures, operations and functions. In re Clay, 966 F.2d 656, 660, 23 USPQ2d 1058 (Fed. Cir. 1992). The purpose of Balban system is to enhance the safety of a person in the vehicle during a crash. The structure of the system includes sensors to detect rapid deceleration of the vehicle, firing squibs or detonation coils, pressurized gas reservoirs, and expandable chambers or airbags. When the sensors detect rapid deceleration of the vehicle, the system operates by firing the squibs to release the pressurized gas to inflate the airbags. The function of Balban's system is to restrain movement of vehicle occupants by inflating airbags. In contrast, a woodworking machine as set forth in applicant's claim 2 includes a cutting tool, a motor to drive the cutting tool, a detection system to detect a dangerous condition between a person and the cutting tool, and a reaction system to disable the cutting tool, none of which is found in Balban's system. Woodworking machines typically operate by spinning some type of cutting tool and the function of a woodworking machine is to cut or shape a workpiece. Because of these differences, Balban would not have logically commended itself to applicant's attention in considering how to minimize the chance that a person could be severely injured by a cutting tool in a woodworking machine, and as a result, Balban is non-analogous art to applicant's claim 2.

The examiner also failed to identify any teaching, suggestion or motivation to combine Balban with the other references. The examiner simply said:

> It would have been obvious to one skilled in the art at the time of the invention to equip the reaction system with the capacitor and fuse, as taught by Balban, in order to disable the cutting tool with an electric circuit that can be monitored for malfunctions and consequently enhance the safety system of the cutting tool. (Office action, 6.)

In other words, the examiner says the combination would have been obvious because it results in a better safety system for cutting tools. But the simple desire for a better system cannot by itself constitute a suggestion to combine references. If it did, then no improvement would be patentable because there is always a desire for improved products. Rather, there must be some express or implicit teaching, suggestion or motivation found in the prior art, or in the knowledge generally available to a person of ordinary skill in the art, to make the specifically claimed combination. Expressed differently, it is not the desire to make something better but the solution that must be suggested or taught, and that suggestion must be clear and particular. See In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453 (Fed. Cir. 1998). In the case at hand, there is no such teaching or suggestion identified by the examiner, so the combination of those references is improper.

Claim 3

Claim 3 depends from claim 1 and is not obvious for the same reasons claims 1 and 2 are not obvious.

Claim 31

Claim 31 depends from claim 1 and is not obvious for the same reasons claims 1 and 2 are not obvious. Claim 31 also recites "a fusible member and where the control system is configured to determine the condition of the fusible member." The examiner says "Balban also teaches that reaction system includes a fusible member F1-F4 and where the control system is configured to determine the condition of the fusible member." (Office action, 5.) The examiner argues that Balban's system inherently determines the condition of the fusible member by monitoring the "whole electric circuit

for malfunctioning." (Office action, 5.) However, monitoring the electric circuit generally is not the same as determining the condition of a fusible member, as is evident from the fact that the circuit may malfunction without indicating the condition of the fusible member.

Conclusion

Applicant submits that all of the issues raised in the Office action mailed July 14, 2005 have been addressed and overcome, and therefore, the application should be allowed.

Respectfully submitted,

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CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent Office to facsimile number (571) 273-8300 on the date shown below.

Date: November 10, 2005

David A. Fanning